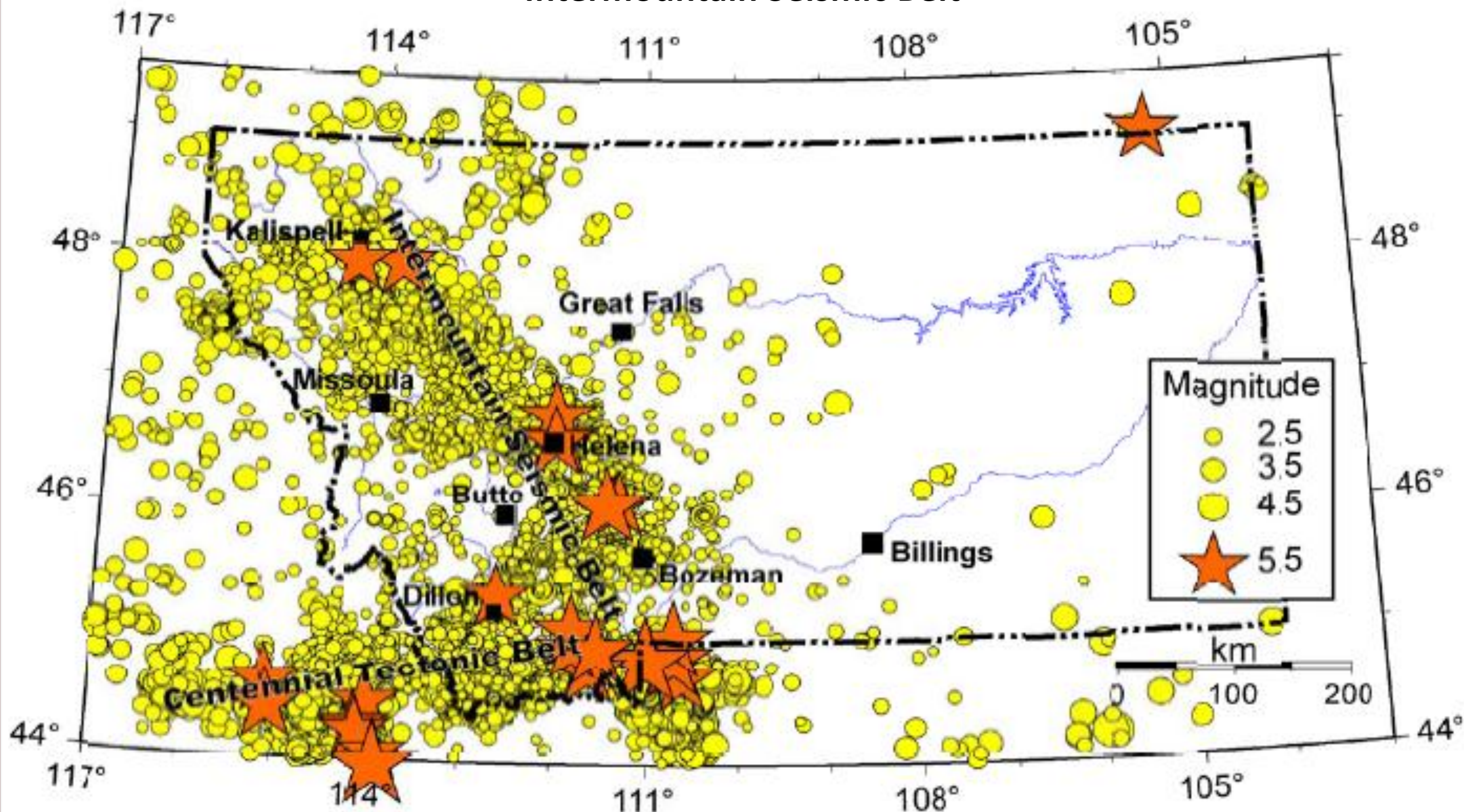


An *earthquake* is ground shaking and radiated seismic energy caused most commonly by a sudden slip on a fault, volcanic or magmatic activity, or other sudden stress changes in the earth. An earthquake of magnitude 8 or larger on the Richter Scale is termed a great earthquake. Fortunately, Montana has not experienced a great earthquake in recorded history. A great earthquake is not likely in Montana but a major earthquake (magnitude 7.0-7.9) occurred near Hebgen Lake in 1959 and dozens of active faults have generated magnitude 6.5- 7.5 earthquakes during recent geologic time.

Intermountain Seismic Belt

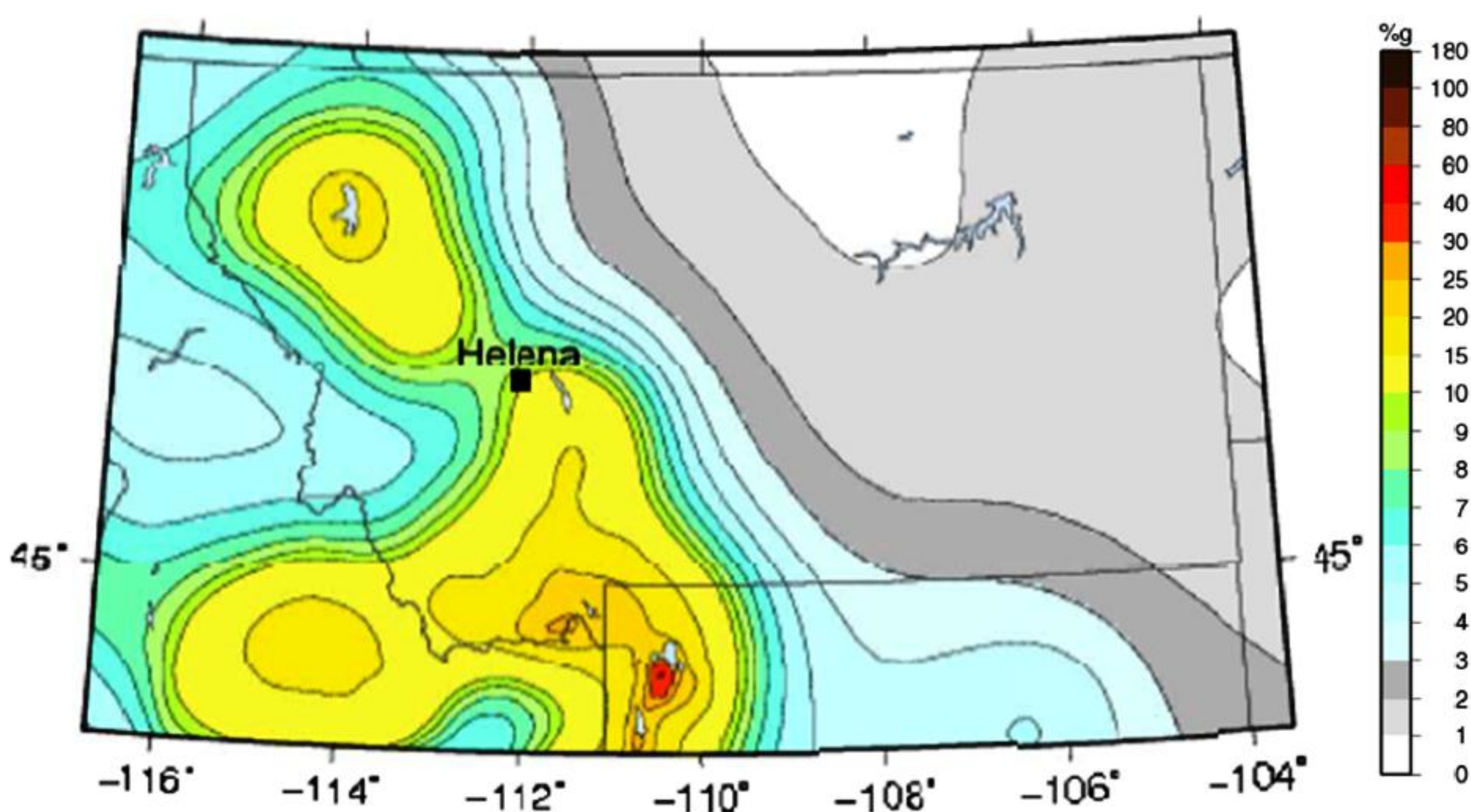


MONTANA STRONG

BUILDING MONTANA'S DISASTER RESILIENCE TOGETHER

EARTHQUAKES

Probability of Major Earthquake in 50 Years



Montana is one of the most seismically-active states in the United States. Since 1925, the state has experienced five shocks that reached intensity VIII or greater (Modified Mercalli Scale). During the same interval, hundreds of less severe tremors were felt within the state. Montana's (Source: MBMG, 2010) earthquake activity is concentrated mostly in the mountainous western third of the state, which lies within the Intermountain Seismic Belt

Hebgen Lake

August 18, 1959
7.3 Magnitude
28 Fatalities
\$11 Million in Damages

Hebgen Lake is a man-made lake, retained by an earth-fill dam. It was and is a popular vacation and fishing spot, near Yellowstone National Park. In 1959 an earthquake with a magnitude of 7.5 occurred along a fault that crosses the Madison River. The quake damaged the dam, but not severely. The most spectacular and disastrous effect of the earthquake was the huge avalanche of rock, soil and trees that cascaded from the steep south wall of the Madison River Canyon. This slide formed a barrier that blocked the gorge and stopped the flow of the Madison River and, within a few weeks, creating Quake Lake almost 53 meters deep. The volume of material that blocked the Madison River below Hebgen Dam has been estimated at 28-33 million cubic meters. Most of the 28 deaths were caused by rockslides that covered the Rock Creek public campground on the Madison River, about 9.5 kilometers below Hebgen Dam.



MONTANA STRONG BUILDING MONTANA’S DISASTER RESILIENCE TOGETHER EARTHQUAKES

1. **“Dogs and other animals can sense when an earthquake is going to strike”** – Animals develop strange behaviors for all kinds of reasons that are not associated with earthquakes. Just because we remember a dog wanted out of a house before an earthquake struck doesn't mean it was because the dog knew an earthquake was coming, it was probably just the cat outside
2. **“Earthquakes are caused by earthquake weather”** – There is no such thing as earthquake weather
3. **“Big earthquakes always occur early in the morning”** – Not true
4. **“California will fall the sea because of an earthquake”** – No it will not
5. **“The ground will open up and swallow people”** – the ground rarely splits open in an earthquake, and when it does the crack is almost never deep
6. **“The safest place to be in an earthquake is under a doorway”** – DO NOT STAND IN A DOORWAY unless you live in an old unreinforced adobe. The safest place is under a sturdy table
7. **“Small earthquakes keep big ones from happening”** – Sometimes big earthquakes follow small earthquakes
8. **“The magnitude of an earthquake determines whether disaster assistance is forthcoming”** – FEMA’s algorithm for disaster assistance thresholds is considered “secrete” to avoid abuse; however, it is based on population density. Public Infrastructure is easier to get than Individual Assistance, therefore it is safe to assume that in most cases disaster assistance will not be available
9. **“We having good building codes, so we have good buildings”** – Most buildings in Montana are old. Depending on where new buildings are built, building codes may not be enforced. New building materials are often be more flammable and toxic than materials used in older buildings
10. **“Earthquakes are becoming more frequent”** – Earthquake frequency is not increasing; however, the loss of life and damages is increasing with each earthquake because of population growth
11. **“There's nothing I can do about earthquakes, so why worry about them?”** – Home mitigation and preparation goes a lot farther than one might think

PRACTICE THE DRILL

1. **Drop** to the Ground
2. **Get under cover** - something strong and sturdy like a 4 legged wood table. Stay away from glass
3. **Hold on** to your protective cover
4. **If buried: bang metal on metal** (preferably a pipe), don't yell because you will loose your voice
5. **If you can get out: evacuate cautiously** – get your Go-Bag if you can, if not use a back up you have stored at another location
6. **Once out go to your pre-identified location** meet your family, coworkers, or class mates
7. **Contact your loved ones** using your emergency contact list



IMPORTANT

Most sever injuries and fatalities occur in earthquakes due to falling debris, so: **DON'T RUN OUT OF A BUILDING** just get under a table. Falling glass and bricks are more likely to kill you than a building collapse

It is a good idea to secure tall and loose objects now (e.g., fans and bookshelves)

Fires, and sometimes floods, can occur after some earthquakes especially big ones

It is good to have a plan to deal with evacuation and sheltering

Practice turning off you **GAS**, **ELECTRICITY** and **WATER** every time you do a drill

MONTANA STRONG BUILDING MONTANA'S DISASTER RESILIENCE TOGETHER EARTHQUAKES

Earthquake Home Hazard Hunt

FEMA 528 9/2005

Recommendations for reducing earthquake hazards in your home are presented on the other side of this poster.

